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INTERNATIONAL RUNNING DEER RANGE AT FORT BENNING, GEORGIA

One of the International Ranges of the U. S. Army Advanced Marksmanship Unit at Fort Benning. (U. S. Army photo)

a magazine for Shooters by Shooters

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DON'T WAIT FOR "GEORGE" TO DO IT

At a recent meeting of shooters a resident of Pennsylvania told of an unreasonably restricted (milder terms than the Pa. shooter used) firearms bill that is in the legislature of that state. A Massachusetts shooter told of an experience he had had from law enforcement officers checking up on shooter citizens. The shooters present were all in agreement that all shooters should "do something" to prevent passage of unreasonable, unsatisfactory legislation on firearms in their own states, but all had to admit (the editor included) that they hadn't done all they could themselves and had left too much for "George" to do. This did point up the fact that most of us do frequently need a fresh "burr under our tails" to keep us onto our toes to do something ourselves to help protect our own interests, and not leave the whole job for "George" to do. (That guy "George" must get terribly tired at times.)

The National Rifle Association has built up a very complete and good reporting service on firearms legislation in all our states. They do alert state associations and even individual members when especially undesirable firearms bills get into the legislative mill in particular states.

The various state rifle and pistol association officers are in general pretty well on the ball at opposing undesirable legislation, and supporting legislation that is desirable. The effectiveness of the state associations' work depends very largely on the size of the membership they can represent. So, if you are going to leave to this "George" the whole job that you should be doing yourself, at least give him the support of state association membership. That is about the least insurance you can buy for yourself, and you shouldn't let it lapse.

Your most effective individual effort against undesirable legislation (or support for the desirable type) will be in personal letters to your local representatives in the state legislatures, or the National Congress. Your representatives can't know your viewpoint on legislation being considered unless **you tell them.** Telling them when you meet them on the street or by a phone call can be forgotten, but a letter is something on record that can be shown in support of their stand. The letters do get attention. Your signature on a form letter is better than nothing but not nearly so good as your own letter expressing your own individual viewpoint and argument. A letter will take but a few minutes of your time and **you** are the person who may gain something from the effort.

If sport shooting is not to become so bound up with damphool restrictive firearms laws that it becomes no longer any fun we've just got to get off our fannies and give tired old "George" a helping hand.

PHT

LETTERS

Dear Phil:

I dislike people who express opinions as though they were proven facts (I hate **myself** at times). In Dec. P. S. page 5, Bellah suggests that a heavy head of metal is conducive to "well filled out" bullets. I rather think Bellah is expressing an opinion only, an opinion which I held at one time, and went so far as to make a bottom pour pot (one of 6 styles) with a long spout to give me a full 5 inch head of metal. Did it cast good bullets? It most certainly did not! It was almost impossible to cast a sound bullet, sometimes 25% would be under weight up to 15 grains or more in a 150 grain bullet (hollow inside with perfect base). Some combinations of heat etc. gave good bullets but results were far too uncertain. In desperation the neck or spout was cut back as short as possible and reliable results were had when lead depth in pot was kept down to ¾ inch or so. The long spout had the gate or valve at the bottom same as all use. I prefer a large rheostat for heat control instead of one of these full-on full-off thermostat 'Controls'.

Now to go back to the Nov. P. S.; page 9, Mr. Hallberg mentions some nice 200 yard groups with 200 grain Match King bullets. This puzzles me, as the only Match King bullets on the list I have are 180 grain but there is a 200 grain International shown. I haven't used either. The point I would like to bring up is the writer's worry about the bullet stabilizing in a 12 inch twist 30-06. While I haven't seen the M. K. or Int. 200 gr.; so far as I can judge it can hardly be much over 1.4 inch long. The best I could come up with in a long .30 cal. bullet was to swage some Dominion 220 gr. S. P. bullets in a two piece die with long nose section of same form as our service round. It was then necessary to size down to .308", work the soft point back again as the sizing had caused it to squirt out. The result was a bullet a full 1.4" long with about .7" cylindrical, with flat base—hardly match quality. So as not to be accused of using magnum velocities, a modest load was used in a 12" twist 30-06. Weather on both days I tried them was foul but after driving out about 30 miles and tramping in through deep snow to the bench, I hated to come back without firing. The summer target frames are out of sight but with the aid of the top of one post and a branch stuck in the snow the target was finally held up, not square on to the line of fire as will be noted by most bullet holes in each card being out of round in the same direction (correct—Ed.). **This** is not tipping of the bullet. Three groups with same load except Federal 210 primers used in one. Wind different on different days and not same sight setting. The rifle doesn't weigh 15 lbs., though I wish it did. The point is the bullets are stabilized as I would expect even if the twist had been a bit slower. (Editor's note: Five shot group on Feb. 6th, fired in strong wind and temperature at about 25 degrees, made a triangle 3¾" X 3¾" X 4⅛" on sides. Two five shot groups on Feb. 12th were 3.55" and 3.6" spread.)

I have always liked the slowest twist that will do the job without crowding my luck. Too many bullets are not perfectly symmetrical. The faster you spin one the harder it tries to shake the barrel and on leaving the muzzle goes off at a greater angle (Dr. Mann). Also, meeting up with lands at an abrupt angle seems to me to be a bit rough on cast bullets. In the cases where I have two twists in the same caliber, in each case the slow twist rifles out shoot the fast twist right up to bullet lengths which cause wobbling or keyholing in the slow twist. This applies especially to cast bullets and many times to jacketed ones that are known to be out of balance. Mind you there can readily be other contributing factors which I am not aware of. I try to keep this in mind as it is the reason for so many opinions going off 'half cocked.'

Someone is always bringing up the Greenhill Formula and usually proceed to ignore the conditions under which it is supposed to apply. I'm far from clear on what the exact conditions were, better yet, let me say I don't know. It does seem that the formula might be useful if we don't try to use it blindly and apply a little common sense, like checking it against some of the longer bullets that we know will shoot well. In May 1939 AMERICAN RIFLEMAN, the late J. Bushnell Smith had an article on twist that was very good but made what in my opinion was grave mistake in not taking the bullet shape more into consideration. The British Text Book For Small Arms 1929 (awfully hard to come by) is the source of information quoted by many of the authorities. Page 288 in this. Also in Ness' Practical Dope On The .22, page 271, he quotes a couple of formulae by W. B. Elliott of St. Catherines, Ont. These are more useful, having all the 'Caliber' figures reduced to inches. There is an error (in printing) which readily shows up when you apply the formula to the examples. They don't explain fully so I would like to suggest you use a bit of judgment along these lines. Use the figure 200 for bullets with really long ogive of say 6 or 7 calibers and work down to the 150 figure for bullets with almost flat points (wad cutters). The formulae are:

Minimum twist equals 200 times bullet diameter squared, divided by bullet length, all in inches.

Maximum twist equals 150 times bullet diameter squared, divided by bullet length.

Remember these are not all the factors which should be considered and since most of the other things that I at least try to take into consideration are just my guess, I will not even mention them here.

Back in about 1890 Gould observed that the hot bench rest rifle of the day, the .38-55, shot most accurately with 330 gr. bullets in the usual twists of 18" or 20" in spite of the fact that this very long and blunt bullet frequently showed slight tipping. I believe he mentions seeing a very fine target on which every shot showed distinct tipping. He speaks of one shooter who increased the length of

the bullet by 1/32" and the bullets keyholed but when the mould was set back to give the 330 gr. weight, the accuracy returned. (This would probably be with the old Ideal adjustable mould.) From Gould's observation and that of many other people it seems that the best accuracy may be had with bullets that have a length that puts them on the verge of keyholing.

So far as my observation and bad memory goes, I think that .705" long jackets are the most popular with the .22 bench resters. Now this as it comes from the B&A jewels of dies has a fine long ogive so let's try the slowest twist formula: Twist equals 200 x .05 (.224 x .224) divided by .705 equals 14.2" necessary with the .2" for safety. Now is it just an accident that the bench resters use the 14" twist and bullets of that length or close to it? I'm only an observer in that accurate company, and not a good one, but about the only things that some of those lads haven't tried is what they haven't thought of or had the time for.

For the life of me I can't see why people seem so darned afraid of a slow twist barrel, especially if they are reaching for accuracy. So they go a bit too far for a particular length **and shape** of bullet, the barrel will probably give **very** fine results with a bullet slightly shorter.

For about 3 months I have been trying to get a 26" twist barrel in .458 Magnum without any luck. I have sent cash and order to Douglas over 2 months ago and he promised to give it a try but I can't get any more out of him. Two other barrel makers completely ignored my letters. Replies from others make me wonder if they read more than half my letters (they were not as long as this). You will have more sense than to ask what I want with a barrel like that. There soon comes a time that when a shooter wants a new gun, even he is hard pressed to think up a sane sounding reason and I haven't been remotely sane about guns for years.

Excuse this illiterate shooting off of the mouth, the ill quoted facts?? and half truths. I read the odd book and magazine but for goodness sakes don't think that I consider myself anything of an authority. Basically I'm a tinkerer; try many things but lack skill and temperament to take enough time and trouble to see things through.

Your reporting in your magazine is fine. Such things as your Greenhorn Bullet Maker take the reader right along and show all the little things which are so often overlooked, especially by those who don't set down the information till a later date. It is so easy to forget the little points which are soon taken for granted but throw the tyro into confusion.

Over a year ago my 22-250 built up a fouling which apparently was not metal as Hoppe's and the ammonia dope formula (fresh) would not move it. Groups almost doubled. Finally I tried B. S. A. 'Cunirid' and that did the trick. I clean with it every time out and the rifle shoots as well as it ever did (one minute sort of thing). I can not see that this excessive scrubbing has enlarged the bore or rounded the edges of the lands. I would suggest its use on any rifle that is badly fouled or past its prime, perhaps not for a really fine barrel but I can detect no harmful effect in much use.

Sincerely,
Bob Snowball, Montreal, Canada

Dear Phil:

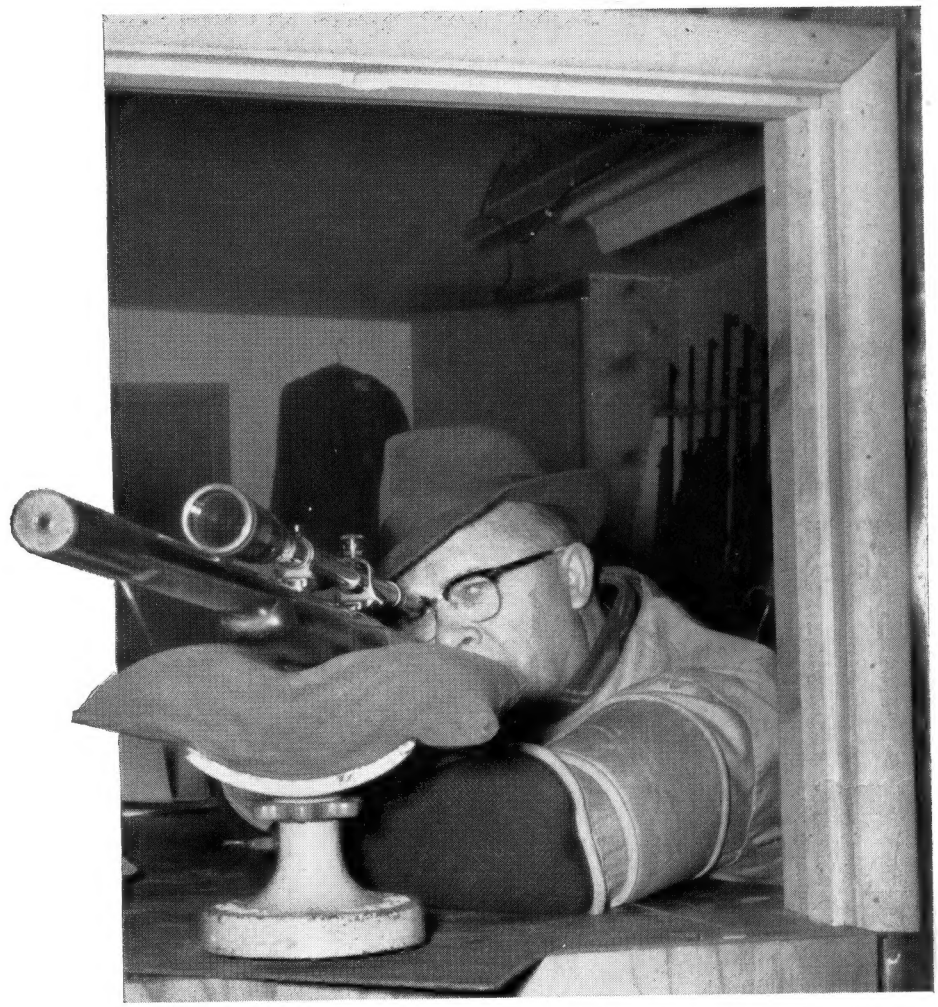
Time I wrote my annual 'letter to the editor', and figured I'd answer Donald Hallada's letter in February issue. His name is quite familiar and he's probably one of my customers, so should receive my comments without getting too mad!

His idea of drawing N. M. M1 rifles by lot at National Matches is theoretically good, but doesn't give shooters an even break by any means. The rifles vary greatly in performance no matter what, and literally all need work to some extent or other to shoot respectably. However, the greatest source of trouble to the civilian shooter trying the M1 is his lack of understanding how critical handling it must be.

Every time the rifle is taken down, for any reason, whether worked on or not, or for cleaning, it will require from eight to eighty rounds before again settling down to reliable sight setting and grouping. If your trigger has to be worked on, don't expect the rifle to give you a possible next time you shoot a string. You can't take the rifle to an armorer for adjustment and expect to see any improvement in the next match.

Bolt action rifle tecnhiques are, on the whole, about 60% wrong for the M1. Prone you lay as far behind the rifle as possible. Sitting you l e a n forward. Standing you shoot with butt on shoulder, not on the arm. You use a sling so tight it's on the breaking point. If your elbow isn't in absolutely the same position for each shot, the group moves, even if every round is fired with perfect sight picture and let-off. An expert shot not experienced with the M1 can't begin to get as tight groups with one as

(Continued on Page Eighteen)

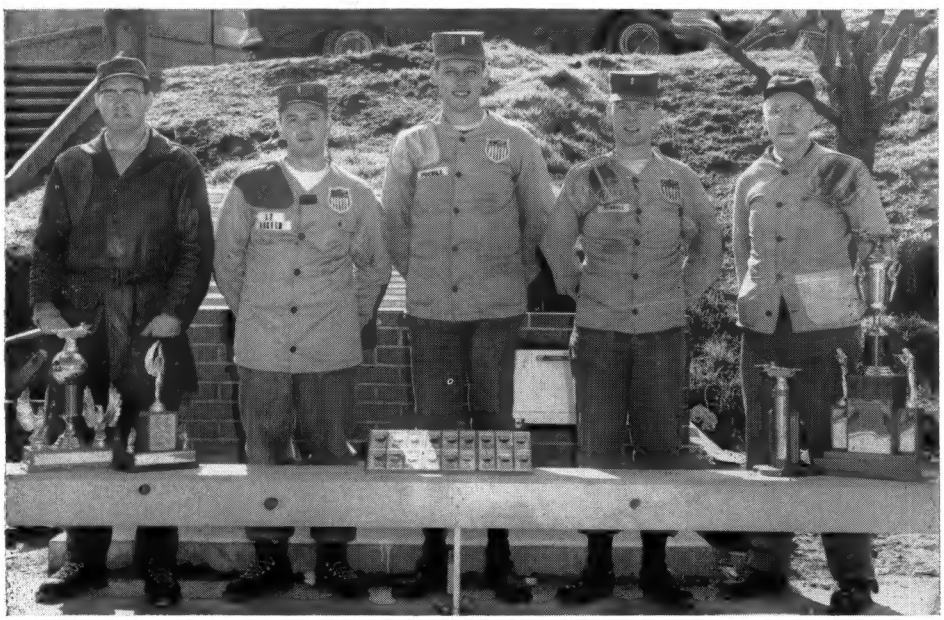


Robert Hutton is believed ot be the only gun writer whose office also is a "shootin' shack," complete with chronograph, loading equipment and targets that may be fired at right out the window from swivel chair. Photo shows Hutton relaxing between hard work at the typewriter, with his M.70 Bull Gun in .25-270 ICL caliber, by doing drop test at 500 yards. The office, part of the Hutton Rifle Ranch in Topanga, California, was burned in the New Year's eve fire, is now rebuilt of aluminum, glass insulation, and complete with air conditioner. Hutton is technical editor, Guns and Ammo, associate editor, Official Gun Book, contributor to Precision Shooting. His series, "Where They Hit" in the American Rifleman was made at this range. GUNS and AMMO photo by Tom Siatos.

ALL RANGES **CAMP PERRY** THREE DAYS
MAY 29-30-31—TENTH NCO CHAMPIONSHIP MATCHES—
SERVICE—NRA—ANY RIFLE
Practice all day Friday 200-3-6-1000 yds. Tell All Your Friends.
For Riflemen Anywhere. Write for program. Cabin—cot—mattress, no charge.
ASHLAND RIFLE CLUB, Herb E. Witmer, Program Sec'y, 622 Ohio St., Ashland, Ohio

(Photo by Warren T. White, Fresno, Calif.)

The Army Advanced Marksmanship Unit International Team from Fort Benning, Georgia that competed in the Fresno, California matches. (left to right standing) Maj. Schultz, Lt. Britton, Lt. Volkman, Lt. Friend, Sgt. Gunnarson, and M/Sgt. Hankins. Kneeling: Lt. Puckel, Lt. Kendall, Lt. Pool and Lt. Foster.



(Photo by Warren T. White)

Winners at 300 meters in Fresno, Calif. International type matches. Left to right: Gordon Taras, Albany, Calif.; Lt. John Foster; Lt. Daniel Puckel; Lt. Presley W. Kendall; John Shirinian, Fresno, Calif.

THE TOURNAMENT CIRCUIT

INTERNATIONAL COURSE MATCHES AT FRESNO, CALIFORNIA

By Henry Wright

Late in 1958, after talking with Chris Peterson of Albany, Calif. and Capt. Riggs, USMC, at San Diego, the Fresno Rifle Club decided to conduct 50 meter and 300 meter International Course rifle matches February 21 and 22.

Capt. Riggs suggested that we invite the U. S. Army Advanced Marksmanship Unit from Fort Benning as he thought they might enter. We did that and received a telegram that they were sending eight competitors plus Maj. Paul Schultz, coach, and M/Sgt. Harold Hankins, asst. coach. Four members of the 1958 U. S. International Rifle Teams that competed in Moscow were entered: Lt. Daniel Puckel and Lt. Presley W. Kendal of AAMTU, Gordon Taras, Albany, Calif. and Sgt. Emmettt Duncan, USMC.

We got busy and put a cover over our 300 meter firing point, International style. We have only 10 firing points at this range, so limited the entries to 30 because of the time it takes to fire the prone, kneeling and standing positions.

In addition to the ISU free rifle division in the 300 meter matches, we had a target rifle division, and in the 50 meter smallbore matches we had a telescope sight division. A large number of gallery shooters entered the scope sight division in the 50 meter matches. The gallery shooters have not been entering the outdoor prone matches but it seems they will turn out for the position matches. Such matches will stimulate free rifle shooting all over the country. The Fresno Club will be happy to put on future matches of this type.

It may be interesting to recall that in 1928 and 1929 the Fresno Club staged 300 meter matches at this same location. Henry Wright won the match 30 years ago. **THE SHOOTING:** It was cold and rainy all day Saturday, February 21st, but national records for the half international course of fire with free rifle at 300 meters fell like flies. Firing in the first relay, Army Lt. P. W. Kendall established a new national mark of 559-11x, which he held for about three hours until surpassed by Army Lt. Dan Puckel with a 567-18x. Also firing in the second relay, Army Lt. John R. Foster fired a 563-14x to move into second place. In the third relay Gordon Taras displaced Lt. Kendall for third place with his 562-9x, which bettered the old civilian record by a full 18 points.

High in the target rifle division were Frenso shooters John Shirinian with 454, Leonard Butler 450, Kenneth Hayes 446 and Bob Perkins 446.

On Sunday, Feb. 22nd, it was partly cloudy with variable winds, but old records again felt the pressure from the Army team. Lt. Dan Puckel, still holding like a machine rest, posted a score of 1146 to bring him within 2 points of the world record. His 397 kneeling was six points over the world record held by Vilho Ylonen of Finland.

The next four high scores were: Lt. P. W. Kendall 1125, Gordon Taras 1123, Lt. Tommy Pool 1120 and Lt. John Foster 1112. The four man Army Team score was 4503.

High individuals in the scope sight division were: A. M. Dapp, Camp Pendleton, 1125, Bob Wood, Ukiah, 1112 and Ed Dixon, Madera, 1110. The State Association four man team posted a winning 4361 score with scope sights, with Thomas Ebner, Laguna Beach scoring 1057, H. W. Newton, Santa Ana, 1117, A. M. Dapp 1123 and Gary Simmons, Los Angeles, 1064. The Foothill Team from Porterville was 2nd with 4320.

CONNECTICUT STATE 28TH ANNUAL GALLERY RIFLE MATCH

The 1549 shooters who fired in the 1959 Conn. State Gallery Rifle Match on the Winchester ranges in New Haven, March 6-7-8, nearly equalled the all-time record entry of 1561 in 1955. Several team entries had to be refused due to range and time limitations. Of the total entry, 551 were senior shooters and balance juniors. At this match the course of fire for seniors is 5 shots in each of the four positions with any sights, and for juniors 10 shots prone and standing, while the sub-juniors fire 20 shots prone—that's all there is.

In the senior competition the Manhassett Musketeers team from New York successfully defended their over-all championship with a 778 score, 2 points under their winning 1958 score. Their individual scores were: Judy Schmer 192,

Thomas Kennedy 196, Tony Simeone 192 and Ronald Boccard 198. Boccard's 198 (48 offhand) was also high individual score.

In second place and high Conn. team was Enfield Rifle Club wiht 774, followed by Torrington 772, Bell City 771, and St. Johns University with 770.

Crowding Boccard's 198 were E. H. Ebdon, Jr., Middlefield; H. Perry Smith, Bell City; and W. Horvay, Torrington, all with 50-50-49-48-197. Frank Briggs of St. Johns University fired 50-50-50-47-197.

For the juniors, Camp Kittatinny from New Jersey were high over-all team for the second successive year with 764 for the prone-standing iron sight course, a single point under their 1958 score.. H. Muller of this team was high over-all individual with 193 and Dotty Yagodowsky was high girl with 191.

LIBERTYVILLE, ILLINOIS GALLERY RIFLE

James O'Brien, Barrington, Ill., topped the field of 126 competitors to win the Libertyville Gun Club Spring Gallery Rifle Tournament grand aggregate with a 973 X 1000 score. Sam Burkhalter, Northbrook, Ill. was runner-up with 970, followed by J. F. Krupka, Wilmette, Ill. 965, Edgar L. Duston, Waukesha, Wis. 962 and Max Lyon, DeKalb, Ill. 960.

Edward Mansch, Forest Park, Ill. was 6th high over-all in the grand aggregate for both high sharpshooter and high junior honors with his 957. R. M. Krizanitz, Rolling Meadow, Ill. and Richard Kirkpatrick, Waukegan, Ill., ranked 7th and 8th over-all for 1st and 2nd high experts, both with 956 scores. Junior SS Kay Yoder, Gurnee, Ill. was high lady and 2nd sharpshooter with her 19th spot 935.

O'Brien won the first match—prone-standing—with 194 but dropped to 9th spot with a 194 in the sitting-kneeling iron sight match to give him 2nd in the iron sight agg. His 194 to win the any sights standing match gave him the ranking over Krupka to win the any sight aggregate, both having 585 scores.

Burkhalter was runner-up in both iron sight matches (193 and 197) to give him the iron aggregate win with 390. He was 7th in the any sight prone-standing match with another 193, 6th in the sitting-kneeling any sight match with 198, and 5th in the any sight standing match with 189 to give him 5th spot in the any sight aggregate, 580.

MAINE STATE GALLERY PISTOL CHAMPIONSHIP

Roger Sargent of Ellsworth, Maine, won both the open and Maine resident gallery pistol championships in the tournament at Belfast, March 15th. Both Sargent and Peter Kostecki, Mattapan, Mass. fired 840 scores—Sargent winning the ranking on rapid fire scores. A capacity entry of 60 fired the one day matches.

Francis Woodhead, Newcastle, Maine, ranked 3rd with 825. Robert Keenan, Berlin, N. H., took high expert with 811; Rupert Johnson, Bucksport, Me., high sharpshooter with 794; and George McPherson, Presque Isle, Me., high marksman with 785.

James Winchenbach, an expert from Gardiner, Me., won the slow fire with 183; Kostecki the three stage gallery course with 280; Woodhead the timed fire with 193; and Sargent the rapid fire with 193.

Scores in the three stage gallery course match were used for team scores to count in the shoot-off between teams in the winter pistol leagues. In the first division the Blue Hlil team defeated Lincoln County "A" by a slim one point margin—1075 to 1074.

CONNECTICUT SECTIONAL PISTOL TOURNAMENT

Albin E. Johnson, Walpole, Mass., topped the field of over 100 shooters in the first NRA Indoor Pistol Sectional Tournament held in Connecticut, at Middlefield Rifle Club range, Feb. 28 and Mar. 1, with an aggregate score of 847. He won only one fired match, the rapid fire with a 195, but had no lower than fifth ranking score in any match to give him a ten point margin over his nearest competitor in the aggegrate. Johnson also fired as a member of the winning Sharon Fish and Game Club team from Massachusetts.

George Kingman, Jr., an expert class shooter from Bristol, Conn., was runner-up in the aggregate with 837; Curtis L. Balduf, Walpole, Mass. was 3rd with 831; Jack MacNeil, New Haven, Conn. 4th with 830; and Raymond Lombardi, Hamden, Conn. 5th with 829. Albert Letalien, Bristol, Conn., was high sharpshooter with 815 and Arvi Gronroos, Norwood. Mass., high marksman with 774. Mervin Terry, Southington, Conn., was high unclassified with 807.

Jack MacNeil won the slow fire match with a 184, outranking his teammate Gerson Jacobson who had the same score. Albin Johnson won the rapid fire with a 195 and William Cory, an expert class shooter from Hartford, won the three stage course match with a 283.

The Sharon Fish and Game Club team of Balduf 278, A. Johnson 278, E. Gronroos 259 and A. Gronroos 274, totaled 1089 to beat the Conn. Sector 13th U. S. Army Reserve team by 4 points.

NEW YORK 100 YARDS INDOOR SMALLBORE

Walter Tomsen won the individual 40 shots at 100 yards indoor match with a 400-34 at the Metropolitan Rifle League individual and two man team match in Brooklyn, March 15th. Others firing possible scores were Sam Tekulsky 400-32, Fred Cole 400-31, Rans Triggs 400-30, F. Boelke 400-30, Joe Diaz, Jr. 400-24 and Barbara Norton 400-23.

The Bridgeport, Conn. husband and wife team, Barbara and Lloyd Norton, won the team match with 799-61 (Lloyd dropping the point). Second was the New Jersey team of Fred and Rans Triggs with 799-60 and third was the New York team of Harry Stone and Walter Tomsen with 798-60.

Walter Tomsen won the individual aggregate with 800-65, followed by Rans Triggs 800-64, Fred Cole 800-59 and Barbara Norton 800-54.

After more than 20 years of resistance the Metropolitan Rifle League has succumbed to classification for its 100 yard indoor matches.

ALASKA RIFLE LEAGUE

This past winter the Anchorage Rifle and Pistol Club has had a rifle league which was designed to promote more shooting in that area, and has accomplished its purpose. The eight teams in the league were all headed up by experienced shooters to provide good competition and assist less experienced shooters. League matches were fired on four different ranges in the area. At the end of the scheduled league program an all league tournament was held in which the Western dropped point handicap system was used to equalize competition, which worked out fine. A new shooter who had shown excellent improvement through the season won the match while two of the competent experienced shooters took the next two ranking spots. Fully half of the league competitors were from the two military installations in the Anchorage area.

"The Billikins," winning team in the Anchorage Rifle and Pistol Club League which, according to the league schedule, was born with the 49th state. Standing, left to right: Pirly Jones, Bud Ertwine, Jim Lawton. Kneleing: Capt. Bob Redfield and Russ Kroboth.

Jan Valle being awarded the trophy for High Lady in the Anchorage Rifle and Pistol Club rifle league by league manager Scott Donaldson.

NEW JERSEY INDOOR "SNIPER'S MATCH"

The Roseland Rifle and Pistol Club held an indoor "Sniper's Match" on their 75 foot range in Maplewood, N. J., March 8th, with 31 competing.

This indoor "Sniper's Match" course was originated by the Philadelphia Rifle

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(Photo by courtesy of GUN DIGEST)
Maynard Buehler scope mounts for Smith & Wesson revolvers.

BUEHLER HANDGUN SCOPE MOUNT

By Kent Bellah

Maynard P. Buehler, well known maker of fine scope mounts for rifles, has at my suggestion brought out a mount for Smith & Wesson target revolvers. The base replaces the S & W Micrometer rear sight, using the sight screw and there are no holes to drill and tap. It is easily installed, and just as easily removed if it is desired to use the equipment sight. C. C. Duckworth illustrates a steady two-hand hold for hunting. The gun is the famous Harvey .224 Kay-Chuk, world's highest velocity revolver, poison as arsenic on small and large varmints. The gun was originally a S & W K-22, the only type suitable for conversion, and the glass is a Weaver K-3 with a post.

Buehler Mounts are suitable for all the target grade Smith & Wesson revolvers, but are recommended for the K-22, K-38, the Kay-Chuk conversion, and possibly the .357 Magnums. They work well with scopes having long eye relief, such as the Weaver K-1 to K6, and I prefer a K-2.5 or K-3. The K-1 gives th advantage of an optical sight, plus slightly more eye relief and a very wide field, but I still prefer a K-3 for long range bench testing of gun and ammo. The K-1 is a very brilliant, fast glass for varmint hunting day or night.

Best deal for bench testing is to make a padded V rest out of ¼" steel rod attached to a base, and rest the barrel in the V. A bag of sand (or coffee grounds t save weight) makes a good rest for the hands, or wrists. The scope can be mounted further forward if desired, but I like it as shown in the photo, for both hunting and bench shooting.

I've glassed a .44 Magnum, but don't recommend it. A lad who couldn't control recoil, and it is an art, got whammed in the face when he fired my gun. Nothing serious, but shooting gets a black eye when shooters go around with a black eye; so let's reserve scopes for guns with no more recoil than the heavy frame .357's with a 6" or longer tube. Those interested in mounts for handguns should contact Mr. Buehler direct (address: Orinda, Calif.) and specify the gun. He made a mount long ago for his personal use on a Colt O. P. .22 or .38, attached by drilling and tapping. The new Smith & Wesson K Mount is a dandy, using standard Buehler rings.

SOME CHARACTERISTICS OF PRECISION SCOPE SIGHTS

By Stan. J. Weatherly, Toronto, Ont.

I read with appreciation the article which Mr. F. L. Magoon wrote for the December issue of "Precision Shooting". Other shooters as well as Mr. Magoon have drawn attention to the relative weakness of design of modern target scope mounts. It seems to be recognized rather generally that both bases and mounts for present day precision scopes are inadequate by comparison with the high standards of performance which these scopes attain otherwise. Probably the best brains in the business of their manufacture have been aware of the problems involved and would be glad to find the practical answers.

I am taking the liberty in this letter of tendering a criticism of certain characteristics of one of the newest additions to the target scope line, with specific suggestions for changes. The scope to which I am going to refer is the most expensive item of its kind on the North American market. My opinions are put forward with goodwill towards the makers whose contribution towards fine shooting in the production of this scope has been a most notable one. The scope is advertised as one of the finest achievements for the target and varmint shooter. It is my interest in both these forms of shooting which prompts a short preface on the varmint shooting we get in these parts.

We have crows; like the poor in the Gospel, they are always with us. Other sections of Southern Ontario are better for the crow shooter than this area. But we do have chucks. While restrictions seem to proliferate, so does Marmota Monax. We do not get "one hundred chucks a day" any more (if anyone ever did?) but twenty-five tails make a fair score. Best shooting is invariably found about the last two hours before sundown. Summer chucks average around eight pounds and some go considerably more. My biggest last year weighed a couple of ounces under thirteen pounds and folded up with a nice head shot at 135 yards. This was a boar of course. The rifle was a .222 Remington for this shot.

The members of our local Bench Rest Shooters club account for a good many chucks in a year. Our Bench Rest shooting is closely tied in with our varmint shooting. As a Club, we do our shooting from the bench at our Range, but pure Bench Rest Shooting is not our particular specialty in itself. We can shoot up to 450 yards with convenience and entire safety, although 450 yards is more distance than an experienced chuck hunter really needs for test purposes. Most Club members have at least a couple of varmint rifle; some have several—probably too many. I have two each in .222, .22-.250 and 6 mm., all rather heavy barrel jobs which are not made for walking with. I use target type scopes exclusively now for my varmint shooting, and I have a specially built gunbox which fits in the car ahead of the rear seat. It stays there most of the year since it is rather an armful to move. It takes three rifles with scopes, riding in well fitted cradles. I do not know how shooters can take around outfits like these without a suitable box or similar device. I shoot bullets in .22 and .243 calibers made in my own B&A dies.

I have used scope sights since 1927 and have had at least twenty in all. In the last few years I have confined myself to the target type only and I now have two each in the large 2" Unertl Varminter with focussing objective and the 6x24X Bausch and Lomb. These four scopes are all I own. The Unertls are both in 10X.

I admire very much the big B&L jobs but I am much happier with my Unertls in the field. I think some modifications could be effected in the design of the B&L scopes to make them more satisfactory for bench and varmint shooting. The modifications I feel are desirable, and will describe, represent my object in writing this letter.

Please let me say at once that I consider the B&L 6x24 scope a great piece of work. Doubtless in their construction the B&L 6x24's are top quality in all respects. When correctly adjusted their definition is superb and some shooters may be interested in an illustration of this. I find that I can do all my test shooting most satisfactorily by using a plain white target mounted on a 16x16 tentest sheet which I cover with ordinary buff wrapping paper. I use a generous size for my aiming marks, usually taking a common bench rest target and reversing it. I quarter the rectangle with the crosshairs. Bullet holes can be seen well in either the white material or on the light buff ground. When shooting at 400 yards with my .243 Win. National Match Model 70, to get a group to determine drop at this outside range, I found that every shot as fired could be spotted as it printed on the buff paper below the 8x8 white target aiming mark. The

B&L was set at 24X and of course was adjusted to be completely free from parallax; i.e., to be in perfect focus for this distance. Another Club member on the adjacent bench with a similar B&L was able to see my shots as well. Conditions were good; the time was evening, the target was well lighted and there was little or no mirage to interfere with good seeing. I repeated these results on another occasion. I suggest that they indicate most exceptional scope quality. I have the targets in my files and I made a point of showing one of them to Mr. Tom Jones, the local Manager for Bausch and Lomb in Ontario.

A test of the same kind at a closer range gave excellent evidence of the quality of the optics of the Unertl scopes. We do not expect any scope, even one with a 2" objective, to define bullet holes at great distances when power is only ten. However, on December 3rd last I was shooting the same rifle at 250 yards with a 2" Unertl in place of the B&L. The aiming mark was the 100 yard Bench Rest target reversed and mounted against the buff paper as before. The day was good for test shooting with some snow on the ground, temperatures about forty degrees, sky lightly overcast and mirage absent. I placed my shots this time in the white 4x5's and was able to spot them every time. Without leaving the bench I brought my groups to center at this range as desired, making sight adjustments from group to group. I may say that I fired three-shot groups for my purpose and ran groups of less than one inch. I could see my shots just as clearly at 250 yards when shooting the .243 a few days later (my five-shot groups then averaged closer to two inches however). Both the Unertl and the B&L unquestionably are fine scopes.

My quarrel with the B&L scopes cannot relate to its general optical quality which is obviously superb. But I think the eye-piece design, if it can be changed, would add greatly to the user's pleasure and to better performance all round. Since the Unertls are entirely free from the drawbacks I have in mind I will go on to speak of them.

In my experience the Unertls at ten power are adequate for the longest shooting the chuck hunter ever gets (I never use a B&L above this power when in the field). Powers beyond ten invite diminishing returns of usefulness in various ways well understood by shooters. I value large field of view and size of exit pupil. All my field shooting is done from a rigid rest and my special interest is in long range chuck shooting. I have a number of shooting rest devices: at one time I set up my portable bench rest under an old apple tree in a farmer's lane and shot fourteen chucks from where I sat. The farthest was 373 measured yards. All my rifles have stocks with the comb height at about 1 11/16". The drop from the scope line of sight centers my eye exactly when the rifle is used in a field bench rest position. When so stocked the combs are higher than anything normally seen and higher than the comb on the usual Bench Rest Match rifle (the Parker-Hale Cleaning Rod **is flexible).** With a rifle so stocked the the exit pupil makes for quick easy sight-eye picks up the target in the minimum of time. The wide field of the Unertl at 10X combined with the generous size of ing as well. The Unertl eye-relief of about 3½" provides an assurance to the subconscience mind that recoil will not be accompanied by a painful contact of the scope with my nose or other parts of my face. But most happily, as the crosshairs come to bear on the target I get an instant impression of a very flat field. The crosshairs appear to be absolutely stable and square with each other. I rely on this condition to take aim without canting. bring the crosshairs to rest and let off my shot.

I find considerable differences when shooting my varmint rifles with the B&L scopes. I will take the lesser point first. I have been cut on the bridge of my nose not once but a number of times because of the 2¼" eye-relief of the B&L. I have to limit myself when using the B&L scopes to cartrdiges not heavier than my .22 250's. If used on my 6 mm's a sponge rubber wrapping is necessary. The edge of the eye-cell of the B&L is pretty sharp! To be fair I should say that I always take a loose hold without any contact with the shoulder. Notwithstanding, I submit that a 2¼" eye-relief is not compatible with good conditions at best; at worst it is a great drawback.

I have a more serious fault to find with this scope. The reticle arms "flutter." It is impossible to approximate immediately anything like the four-square sight picture that is found with the Unertl. I cannot stress too much how this interferes with good shooting. It takes much longer to get a good sight picture and it is hard to hold it. The delay is most inimical to the best shooting whether at the field or at the bench. If I am doing test shooting at the bench I depend on the straight line appearance of the horizontal member to give me a constant free from cant. The ends of the crosshairs with the B&L fall away from the horizontal and the ends of the vertical are not where they should be, somehow. I believe the expression "fluttering" is used by optical engineers with reference to this apparent motion of the crosshairs members. Is it due to curvature of field arising from the eye piece design or what is the cause? I rate it as a very great drawback indeed.

I have heard it argued that some makers are satisfied if the field is flat at the center. Distortion of the target can be tolerated at the edges according to this view. I do not notice any overall distortion with the B&L but I am plagued with the fluttering crosshair effect. I read in an "American Rifleman" article

(Continued on Page Seventeen)

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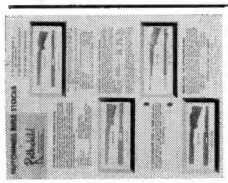

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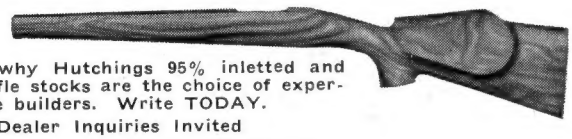

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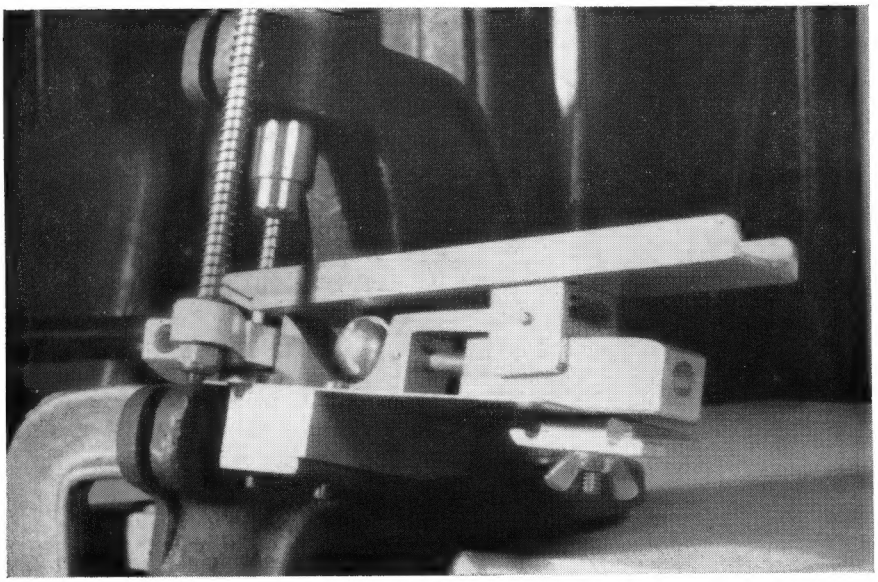
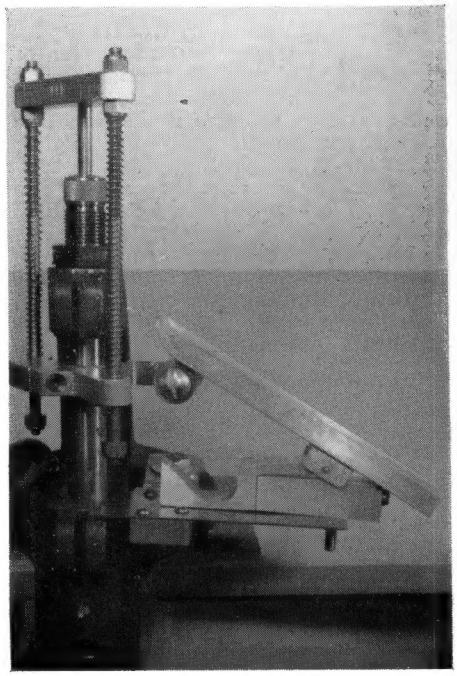


Ernie's Automatic Catcher on Pacific Super press with catcher in unit receiving position prior to tilt up of trough.



Ernie's Auotmatic Catcher in tilt-up or dump position.

AN AUTOMATIC CATCHER FOR HOME BULLET MAKERS

Crawford H. Hollidge

The need for an automatic catcher indicated itself soon after I received my first set of bullet making dies from Ray Biehler. This was in the early stages of the game and the dies were only the second set through his shop. Through the years I have noticed that he has made some improvements and modifications but those changes in no way equal the number of changes I have made in different model unit catchers to go with his bullet making equipment. The early model was a very simple one, made of bent up aluminum sheet with a wide elastic that both held it in place and gave it a rocking motion which provided finger clearance and tip up. This model worked very well for me although I must say that I frequently had to re-bend and shape it to keep it functioning. Occasionally I would give one away but I was afraid of losing my friends because of the frequent tinkering and readjustment that was required on the unit to keep it functioning for cores, seated jackets and swaged bullets. It was so critical that it had to be re-shaped, always for dies of different caliber and frequently for different core lengths or jacket lengths when using dies of the same caliber.

I am familiar with a number of different presses and methods of mounting them on the side, at an angle, and upside down. I always come back to the RCBS type B as the fastest and best of the bullet making presses. I have pinched my own fingers pretty hard a few times, and even if I hadn't seen Cap Baldwin's finger with an eyelet hole up through his finger and finger nail, I would be reluctant to recommend the two man system for bullet making. Some of the wives or folks who assist to speed up bullet making operation are sooner or later going to have serious cause for complaint as the other fellow operates the handle when somebody's finger is in the way.

An automatic catcher doesn't insure against pinched fingers but it does eliminate a lot of handling and permits an instant insertion of a new unit as the finished one clears the die. With the automatic catcher, production speeds of well over 1,000 an hour are possible. Speed tests might get you up to 2,000 an hour but when you get to 1,600 an hour, you will find you don't have much time to chin with your buddy or to figure out why you got the flyer on last Saturday's target.

The requirements that I set up for the Automatic Catcher were modified or altered throughout the years, and as simple as the current model looks, it has been through many stages, requires care in manufacture and it must be long lasting. Since some users will frequently want to use their presses for normal reloading operations, I tried to avoid a design that would interfere with this use, and therefore when the Biehler equipment is removed from the tool, it takes but one thumb screw removal to put aside the latch assembly. The thin flat deck on which this assembly slides remains in place and can be an improved feature to the reloading press. This deck-like platform is screwed or clamped in place beside the RCBS presses or under the right hand hold down bolt going through the base of the Pacific presses. Adequate finger room is desirable and for that reason the lower saddle for the Biehler type ejection frame was widened and reshaped at the same time it was converted to a means of holding the roller which engages the latch as the stroke is raised or lowered. The top of the ejection frame must also be replaced to match in hole location the new bottom unit. These replacements for the ejection frame are supplied; however since B & A made two sizes of knurled punch holding nuts for his rams, the diameter which the customer is using must be known to provide the proper bottom section for the altered ejection frame. Complete ejection frames are not essential; however, the bottom section of the frame must be in place to operate the latch.

By referring to the photo, a good idea is obtained of how the unit functins. The roller, being attached to the ram via the lower ejection frame unit, travels up and down with the ram. As the ram reaches the upper lip of the latch which normally is in position just off the dead center of the roller, the latch with attached trough is pulled in to a horizontal position in under the die and just clear of the punch being used in the ram. The bullet or core drops in to the lip of the trough where it may be inspected as necessary or allowed to slide from the trough.At that position, units may be inserted in the die; however, as soon as the ram starts upward, the spring loaded latch pulls away as it maintains contact or loses it with the roller, thereby providing unrestricted finger room between punch and die. The trough progressively tilts as it rides on the top of the roller until the bullet or other completed unit slides into a suitable container. The weight of the trough holds it in contact with the roller as the ram travels downward and is again pulled into place by the latched action as the cycle is repeated.

A stroke counter is a decided advantage on a bullet making machine in that it keeps accurate track of the units made and avoids waste of time and material. Such a counter may be installed on the lower ejection frame yoke to which the roller is attached.

The assembly will never be a requirement for every household but as an addition to good bullet making equipment, it is well worth while. The materials used are reasonably trouble free, the device is probably patentable and is undoubtedly a great time saver with some safety factors.

.264 STROUD EXPRESS

By Kent Bellah

My good friend and hunting companion, J. D. Stroud, of Stroud's Gun Shop, 112 Line Drive, Gainesville, Texas, has developed a real neat little wildcat rifle that will interest many shooters. Unlike some wildcatters, Jeff is a modest fellow, and doesn't make any claims that are out of this world in ballistics or performance. The Stroud .264 Express resembles the old .256 Newton, that was an efficient big game cartridge, even with now obsolete powders, and was a forerunner of the .270 Winchester. The Stroud case is 2.385 to 2.395 maximum inches long, with a body taper of .012" for easy extraction and bolt lift,. and a 30 degree shoulder. His personal rifle features a match grade barrel by Sam Mays of Apex Rifle Co., 1 to 10" twist, 22 inch light sporter .585" at the muzzle

(Continued on Page Eighteen)

THE INFORMATION BENCH

The Information Bench service is available to all Precision SHOOTING readers. With your questions, send a large, stamped, self addressed return envelope for a reply. Selected questions and answers, covering as wide a variety of interests as possible, will be published in these columns. Address your questions to the following people.

Bench rest, varmint and hunting rifles, accessories, handloading, components and shooting methods—**M. H. Walker, THE INFORMATION BENCH, RFD #1, Box 118, Mohawk, N. Y.**

NRA and Free target rifles and shooting—**Roy F. Dunlap, 2319 Ft. Lowell Rd., Tucson, Arizona.**

Sporting handguns and loading—**Kent Bellah, Saint Jo, Texas.**

American Single Shot Rifles—**Rupert S. Hill, 325 James St., Elkhart, Indiana.**

(**General reply** to letter from Doak Criss published in December 1958 issue.)

Haven't seen the answers to that two-page-single-spaced-epistle, probably missed them in my hurried perusal of Precision SHOOTING.

Anyway you asked for more than one answer, so here goes. However, don't take me for an authority on internal ballistics. Better get yourself a good book on the subject, but, don't believe everything you read there either.

Ether is one of the solvents used in manufacture of most smokeless powders. I believe it is used in advance of the extrusion process to get the plastic mass into an extrudable condition. As you probably know, powder grains are small extruded cylinders.

All powders leave residue on burning. Some leave more than others. The amount of residue depends to a great extent on how well suited the burning rate and retardent coating are to the load you are using. Unsuited powders can give quite large amounts of soot, etc. However, sad to say, the quality of the powder has something to do with this also. Poor quality raw materials, with unwanted impurities, and lack of care in manufacture can produce powders with large amounts of noncombustibles. The bench rest shooters could get along nicely without powder fouling. Powder fouling is one of the last little hurdles preventing the groups from measuring .000.

Salvaged powders available today should not increase barrel wear if suitable powders are used in sensible loads.

The fit of the case in the chamber is something on which the stool shooters have good experimental information. My own experience indicates in general that a tight fit (no more than .001" clearance) is a definite detriment to accuracy. Now there are exceptions to this rule, but let's leave these to the guy writing the book. With an outside neck reaming device the neck wall thickness variations can be held to .001" or less. With cases as good as this, .0025" to .003" is the ideal clearance. More clearance does no harm to accuracy but will reduce case life, particularly if your neck sizing die is a little small. Too much cold working of the brass makes it hard and brittle—neck splits are the result. You are absolutely right about being able to size bullets with the case neck, especially .224 bullets. This may be a hindrance or a help depending on the other variables. Ideally though the case neck should be sized just enough to hold the bullet and that's all.

Bullet fit is important within reasonable limits. The exact limits are not known. I have chosen .0003" as a maximum allowable variation from groove diameter in the .224" size. The whole problem is to measure the barrel and the bullets to establish these limits. I use micrometers more than average bench shooters, but I can't guarantee better than plus or minus .0001" on a round. For two measurements this error uses up 66% of the established limits. So who wants to argue with me about tenths? IN ADDITION, how do we measure bullets? Do we measure them on the base or on the side? There may be as much as .0006" difference. Until the average shooter has the equipment to measure to .0001" in the barrel and on the bullet the above limit of .0003" plus or minus seems more than reasonable. Plenty of guys win bench matches with bullets .001" under groove diameter (and .0005" over). A lot depends on what you THINK is best.

Those who use the hand type die usually size a large portion of the neck just enough to hold the bullet without using the inside sizing plug. Those who use their dies in a tool may use this method just mentioned or they may size and plug only a small portion of the neck. Experiment until you get a method which produces good results and stick to it. In fact, just eliminate all of the variables this way and you have it made.

My own theory on the "Whammy" on the base of the bullet is that a lot depends on the shape of the throat and how you load your ammunition. If the throat has a short free-bore (say .040) and the bullets are seated so they do not touch the lands and your case is full of powder to the bullet base, then it is quite likely that the bullet is well seated in the barrel before the pressure rise comes on. If

(Continued on Page Sixteen)

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COMING BENCH REST MATCHES

MID-CONTINENT REGION

WICHITA, KANSAS: Apr. 5, May 25, July 3-4 (Kansas State Championships), Aug. 8 and Oct. 5; unrestricted bench rest and Varmint Rifle classes, Wichita Bench Rest Rifle Club, Bert Volker, Sec'y, 900 Peterson, Wichita, Kansas.

FLORISSANT, MISSOURI: May 17, July 19, Sept. 6, unrestricted bench rest rifles; June 14 and Aug. 16, Varmint Rifle only; all daytime matches: Nine Ring Sportsman's Club, Alfred W. Walter, Vice President, 1925 Raft Dr., St. Louis 14, Missouri.

ST. LOUIS, MISSOURI: Unrestricted bench rifles—May 10, June 7 (Missouri State Championship), Aug. 9. Varmint and Sporter rifles—Apr. 19, July 12, Sept. 13. Bench Rest Rifle Club of St. Louis, James R. Ernst, Sec'y, 2230 Ferncliff, Kirkwood, Missouri.

TULSA, OKLAHOMA: Registered shoots—June 20-21, Sept. 5-6 (Regional Shoot). Unregistered shoots—Apr. 12, May 10, July 25, Aug. 15. Tulsa Bench Rest Rifle Club, E. A. Anderson, Sec'y, 3604 South Toledo, Tulsa, Okla.

EASTERN REGION

SOUTHBORO, MASS.: Apr. 19, May 24, June 28, Aug. 16: Southboro Rod & Gun Club, J. W. Baldwin, 5 Milk St., Westboro, Mass.

STAUNTON, VIRGINIA: Apr. 25-26, June 20-21, Oct. 10-11; Stonewall Rifle & Pistol Club, J. D. Perry, Box 471, Staunton, Va.

PLAINFIELD, NEW HAMPSHIRE: May 17, July 19, Sept. 20; Plainfield Rifle Club, Inc., Leslie Stone, Plainfield, N. H.

AUGUSTA, OHIO: May 16-17, June 13-14, Aug. 1-2, Aug. 22-23, Sept. 19-20; Reed's Run Rifle Range, Box 66, Augusta, Ohio.

DUBOIS, PENNA.: May 30-31: DuBois Rifle & Pistol Club, P. O. Box 207, DuBois, Pa.

EASTON, OHIO: June 28; Chippewa Rifle Club, Nelson Berger, R. D. 1, Box 192, Marshallville, Ohio.

LEWISTOWN, PENNA.: July 4-5; East End Blue Rock & Sportsmen's Club, P. J. Aurand, Milroy, Pa.

ALTOONA, PENNA.: July 12, Aug. 9 (state championship); Altoona Rifle & Pistol Club, John Kaylor, 709-4th Ave., Juniata, Altoona, Pa.

DETROIT, MICHIGAN: July 18-19; Detroit Bench Rest Club, Ernest G. Scafuri, 20475 Revere, Detroit 34, Mich.

WILKES-BARRE, PENNA.: July 25-26 (Eastern Region Championship); Wilkes-Barre Rifle & Pistol Club, John A. Petrasek, 80 Eley St., Kingston, Pa.

JOHNSTOWN, NEW YORK: Sept. 3-4-5-6, **THE NATIONAL CHAMPIONSHIPS;** Pine Tree Rifle Club, Edwin R. Kilmer, 318 N. Perry St., Johnstown, N. Y.

NORTH CENTRAL REGION

BUFFALO, WYOMING: May 3 (crow shoot), May 24, July 18-19; Buffalo Outdoor Rifle Club, C. C. Hankins, P. O. Box 151, Buffalo, Wyoming.

SOUTHWEST REGION

YREKA, CALIFORNIA: May 24, July 19, Sept. 5-6; Yreka Rifle Club, Ray E. Jones, 508 Knapp St., Yreka, Calif.

EASTERN REGION WINTER MEETING

Forty resident members attended the annual Winter Planning Meeting of the Eastern Region, NBRSA, at Elmira, N. Y. on February 14 and 15, 1959.

The treasurer's report showed the region to be in a healthy financial condition with assets of $1581,73. Edward Davis was re-elected as Regional Treasurer.

The new NBRSA rules were discussed at length and it was the consensus of sentiment of the members present that the new rules be accepted in good spirit and given a fair trial.

A committee of Varmint Rifle shooters was appointed to promote and act in an advisory capacity for this class of shooting. The committee named is: Clarence Aumiller, Ed Sweeney, John Kaylor, John Snyder, John Collins and Ray Novak.

Robert Hart announced that the family of the late Charles Hart of LaFayette, N. Y., were providing a new Charles R. Hart Memorial Trophy, to be competed for annually by teams, nationally. (The rules for this competition are printed in this issue and in the new NBRSA Rule Book.)

The meeting rceommended that the NBRSA Directors provide a design and medals for award to second and third place winners in each the National Championship Aggregate and the 100 yard and 200 yard sub-aggregates of the National Championship course.

There was discussion of suggestions for dividing the big Eastern Region into two regions. No formal recommendation was made and it appears the consensus of opinion is that more study of this proposal is desirable.

Director Irven Mohnkern suggested the desirability of a seven or nine member Advisory Committee to assist the Directors on matters of policy and other problems of the Region. The meeting empowered the Directors to appoint such a committee and the following were appointed: Wm. E. Cotter, James Perry, M. H. Walker, Robert Stinehour, Brunon Boroszewski, George McMullen, Al Creighton, Clair Taylor and Alfred Glendening.

In discussing the program for the 1959 National Championship Matches at Johnstown on September 3-4-5-6, it was suggested that the fourth day (Sept. 6th) be devoted entirely to Varmint Rifle matches.

The members present reaffirmed the belief that these winter planning meetings are most worthwhile for the Eastern Region. They suggest that other Regions of the NBRSA might find that similar meetings could be beneficial to their own regional organizations.

CHARLES HART MEMORIAL TEAM TROPHY RULES FOR COMPETITION

1. Teams may be sponsored, or represent; Clubs, Cities, States, Business Firms, and Etc.
2. A team shall be composed of three (3), four (4), or maximum of five (5) shooters.
3. Name of team and all team members must be registered with an appointed statistician to be eligible.
4. An individual may be a member of one team only.
5. This contest is for Heavy Bench Rest Rifle Matches, restricted and unrestricted classes or a combination of both.
6. Contest will be for each calendar year.
7. Scores will be taken from any N. B. R. S. A. registered match, National Match Course of fire (5 ten shot matches at 100 yards and 5 ten shot matches at 200 yards), minute of angle Grand Aggregate.
8. Team score will be the three (3) individual high Grand Aggregate of team members shooting in match (added and divided for team Aggregate).
9. A minimum of three (3) matches must be fired to qualify for trophy.
10. Team with high three (3) match team aggregate receives trophies.
11. Large trophy will be awarded to winning club or team for one year and will pass to next winning club or team. The year and club or team name will be engraved on this bowl each year.
12. Three (3) members of the winning team with the three (3) high individual Grand Aggregates will receive permanent trophies.
13. Scores: An original copy of club match report must be mailed to the contest statistician by each team captain, marking the three (3) high team members' Grand Aggregate to be computed for team score. Team captains will maintain a record of team members' scores for awarding of individual trophies.
13. Team captains should request an extra copy of club match report (official results bulletin) to mail to contest statistician for score recording. (It is a gentlemen's agreement that no more than two members of any team should have ever ranked in the 'TOP TWENTY" in any N. B. R. S. A. National Championship)

The 1959 contest Statistician is Allan D. Abramow, Main Street, Lima, New York. Team registration, including captain's name and address and names of all team members, and score bulletins from all matches fired, should be mailed directly to Mr. Abramow in 1959.

FOR THE FIRST TIME in several months we have on hand interesting short articles and items that we don't have room to publish immediately, but they will be coming along as we can find room for them.

BEGINNERS' CORNER

By Robert F. Stinehour

Since it would take a book to hold the explanations of a complete stocking procedure, I shall go into the main points only. Many things I do are controversial to other stockers, but work well for me.

Using only the forward inletting screw, on the completely stripped barreled action, it is lowered in the stock to 1/16 inch from final bedding. The guide screw should be tight in the hole and the recoil lug allowed to make its own **hard** contact, being careful to make the contact harder on either side of center. A harder center contact is apt to set up erratic vibrations. By finding its own contact I mean just that, as I've seen stockers rap the end of the muzzle rearwards. which is not good in my opinion.

Many stockers use Prussian Blue to show markings, as I did until a visit to John Warren's shop a couple of years ago. He converted me to lamp black which is far better as it lays on the surface of the wood, not penetrating as the blue does and then possibly making your cuts deeper than you really should at times. Also it doesn't seem to get on everything witihn a hundred yards, as the blue does.

The trigger guard is then inletted to its final resting place. On bench rest and other single shot jobs, I set the guard .010" to .015" rearward. Thus the screws are pulling to maintain constant contact on the recoil lug.

Now the rear hole is drilled and the forward one reamed so the guard screws cannot contact wood. Still using the forward guard screw only, and tightening it each time the barrel and action are inserted, I accomplish the final bedding. The fingers of the hand not being used to tighten the guard screw should be in contact with the action and wood to feel any possible springing. If there is any spring the rifle will not deliver its best.

This writer won't argue for a minute that a bedded barrel will not shoot with a floated barrel, **if properly bedded.** But unless you have the ability of Clair Taylor or some others, I suggest doing as I do and bed 1" to 1½" forward of the receiver and float from there out. This will support the unit where it wants most to sag.

A properly stocked rifle should maintain zero when taken down and reassembled, as nearly as in removing and replacing the scope on the barrel. The beginner must not think for a minute that he can achieve this kind of a job in an evening or two. On a 722 for example, which is a comparatively easy one to inlet, it still takes me 12 to 16 hours on an unmachined blank.

When making a new stock for myself I don't put any finish inside until I've lugged it to two or three matches with the lamp black on it, and touched up those few little high spots.

In my opinion, 100% contact is not necessary even on a bencher, but a slight high spot in the wrong place can be very harmful. I think Bill Cotter wrote something along this line some time back. (June 1958, page 11—Ed.) When the good weather rolls around it would be well for anyone to check that rifle which shot so well last year for it may have moved slightly through the winter, and not do as well now.

THE MEMBERS FORUM

Dear Phil:

Immediately upon learning the N. B. R. S. A. had adopted five bench rest classifications a group of us got together here in Indianapolis and formed a new club—the Mid-State Shooters Club. We have leased the ground and will have a pistol range, a smallbore rifle range, a shotgun trap, and eight solid benches under cover.

We feel that the adoption of these classes is the greatest thing that has happened to the Bench Rest game in a long time. There are several Bench Rest shooters in Indiana, only one of whom is known by me personally. On the other hand, I know of a large number of informal Bench Rest shooters and men with varmint rifles and other good rifles that would qualify in the 10 lb. and 13 lb. class who would like to attend some shoots in their class. If additional dyed in the wool Bench Resters aren't to come from such people, where are they coming from? God knows we need more of the serious Bench Rest shooters than we have. They have done so much for shooting—God Bless Them!

At first we will have Varmint and the more informal type matches. Later this summer we hope to have backing strips so that we can accommodate the "purist" boys.

We are anxious to cooperate with other clubs in avoiding conflicts. We would appreciate receiving schedules from other clubs so that we may plan accordingly. Any clubs willing to send us their schedules should send them to Wm. Angel, 3121 Stuart, Indianapolis, Ind., or, I will be glad to handle it for them. No doubt some of our fellows would like to attend some of their shoots.

Lowell Welch
3758 N. Pennsylvania #1
Indianapolis, Indiana

Dear Mr. Teachout:

For the past four years I have been trying to get some club in this area interested in holding bench rest matches under NBRSA rules and have now interested the Guthsville Rod and Gun Club. They have added a good 100 yard bench rest range with right and left hand benches and equipped with moving backer to their other shooting facilities on their 36 acre club grounds, and I must say they have done an excellent job. There are tree shaded picnic areas, ample parking space, a fish pond and 48' X 62' club house on the grounds.

On May 3rd the club will hold their first bench rest shoot. The Club House will have the good Pennsylvania Dutch cooking under direction of the ladies of the club. Information about this and other shoots may be had by addressing the Guthsville Rod and Gun Club, P. O. Box 352, Allentown, Pa.

Raymond H. Williams
Allentown, Pa.

Dear Mr. Teachout:

Since the 1960 National Bench Rest Championship Matches are planned for Tulsa, we of the Tulsa Bench Rest Rifle Club are beginning to make plans for holding a real good one. The question of the date is one for which we would like to have some help. We feel that there is a possibility that by holding the matches in June, more shooters could attend since many of the fellows must be back on the job by September, and many must be at home prior to the beginning of the school year. As you have an extensive acquaintance with the NBRSA membership and a magazine that seems to attract many answers to the most casual statement or question, will you help us get a cross-section of opinions of the most desirable date for holding the matches.

E. A. Anderson, Sec'y
Tulsa Bench Rest Rifle Club
3604 So. Toledo
Tulsa, Oklahoma

ARIZONA BENCH REST MATCH

The first shoot sponsored by the new Arizona Benchrest Shooters Ass'n was fired on the Miami Rod and Gun Club range, March 15th, in a very high wind.

Frank Minucci of Miami was the unrestricted rifle winner, Buelah Williams of Casa Grande took the 13 lb. rifle honors and Jim Wilkinson of Prescott was top man in the Sporter class. Pat McMillan of Phoenix was second with both the heavy and 13 lb. rifles and shot smallest group of the day with the 13 lb. rifle.

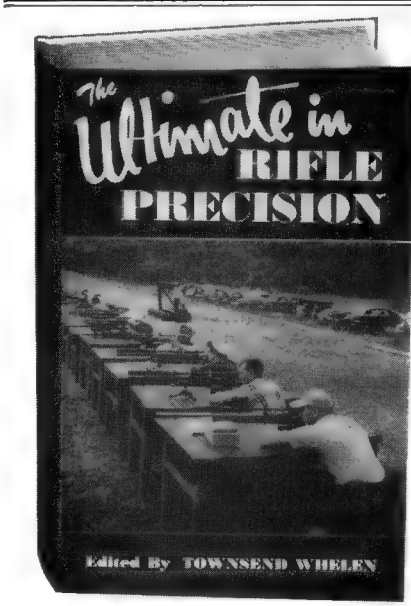
Shooters wanting information about these Arizona matches should write Jim Wilkinson, The Rifle Ranch, Prescott, Arizona.

NEW RULE BOOKS READY

The 1959 NBRSA rule books are now available from the NBRSA, Lyndonville, Vt. at 25¢ per copy. In addition to the new rules on rests, and the new Varmint and Sporter Rifle classes, the new book contains the rules for the new Charles Hart Memorial Trophy team competition which is national in scope.

Targets are available from the Lyndonville, Vt. NBRSA office, including the BR-100-2 target whcih is required for 100 yard shooting in registered shoots.

MATCH SHOOTERS — CAUTION: It is sensible and wise to get programs for any shoot you are interested in and find out the exact conditions for the shooting before you complete your plans to attend. Further, dates sometimes have to be changed and if you are not on the mailing list you may not learn of the changes.



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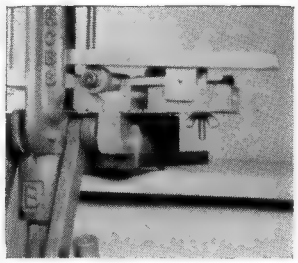

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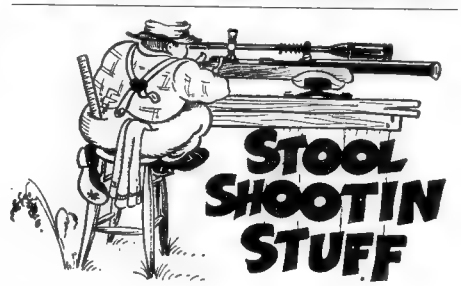

Dear Phil:

Spring is here according to the calendar and also I received a letter from George Morton yesterday telling me how attractive the bloom was on his plum and peach trees. Easter is a few days off but from the radio reports this morning, there will be plenty of snow in many parts of the country for that occasion and I guess your area is no exception. We have done pretty well on old Cape Cod this year and the snow was only ankle deep on one occasion. I saw considerably more than that during Fall deer hunting in New Hampshire. There is less than 200 miles distance between here and New Hampshire but the salt water areas to the north, east and south of my house plus the lakes at the west influence the temperature so that both days and nights are milder. The reverse is true in the summer time and there is almost always a cool breeze from some direction.

Yesterday there was very little wind and I loaded some gear and guns into the car and went over to the benches. I hadn't shot my .219 Don which I call my Texas model since I made it up for the San Angelo shoot, and it is one that I am very fond of. The action is one of Hart's early ones and of course has one of his barrels on it, with chamber and fitting job by Bill Cotter.

The stock movement, if any, was the thing I was anxious to check although I had no reason to suspect trouble from the laminated blonde mahogany wood which has a very pronounced fiddle back. True fiddleback is rare in mahogany and I have only seen a very small amount of it. There is an old saying that fiddleback wood is more stable than any other. The grain structure probably does have inherently greater stability but I think the reason why this particular stock of mine holds so well is because the wood came from a dead standing tree. The pores of the wood seem to be free from sap which I think accounts some for the low specific gravity of the wood. The important point is that the combination of grain and dryness is a very excellent one which, backed up with John Warren's stocking, gives a gun which remains stable.

I wiped a rag through the bore and popped out a group that was about .190 from ammunition loaded up last summer. In addition to checking to see that the gun was still shooting good, I wanted a control medium so that I might compare the performance of my .308 with some of my newest 30 caliber bullets. I was surprised to note considerable mirage indicated by the .219 groups, and under conditions where no wiggle waves were evident. The .219 was making groups between .200 and .300, the progressive twist barrel .308 was making groups between .400 and .500. Later when the wind sprang up, the .308 held better proportionately than the .219. This showed that the .308 was doing pretty well, especially in that its stock dimensions are those of a heavy varminter.

I have come to the conclusion that mirage waves as we see them through our scope must be of considerable depth to be visible and appear to be running from right to left, left to right, or vertical. My 100 yard range is almost entirely across water. There is 10 feet of ground space between the muzzle and the shore and quite understandably the wiggle waves would be out of focus in my scope in that distance, even if they were arising from a land condition. If there are waves caused from conditions on the water, I should see them running. There is a small land space of about 5 feet between the shore line and the targets and 4 feet between the targets and the 45 degree angle sand backstop. At no time could I see waves running through several different powered scopes but the mirage definitely was there because the target rings fuzzed up ever so slightly and the shots proved it. This all brings us back to the point that we have all known pretty well, Phil, that the boys who can read mirage better, outshoot us. I feel that I need a lot of mirage shooting practice, and there is nothing like the competitions to both give the practice and show up one's performance. You can make small groups in good quiet early morning or late evening shooting and determine whether or not your gun, ammo combination is good but it is the middle of the day shooting under some of the conditions you more likely find at the shoots that will give you practice but wear out your barrel.

Bob Stinehour in his last month's article pointed out that many good barrels have been discarded with the assumption that they are too badly worn to give good results. Some barrels do wear faster than others and some are not so smoothly finished or well cut as others but I am one of the one's who has been convinced for a long time that barrels are probably the most maligned of a shooter's combination. I often tell you of my rough one that shoots very well, one that shoots 10" off at a hundred yards because of bend, and one which is less than 20" long which also shoots like a house afire, my progressive twist barrels in .219, 6 m/m and 30-06 all shooting well, but I'm a great believer in keeping them clean.

I often hear a fellow say he is afraid to wear his barrel out with too much cleaning. It is the old story of the abuse and not the use that tells the tale. It is undoubtedly possible through faulty or careless cleaning habits to damage a barrel but if one uses the Taylor and Robbins cleaning bushing or in a pinch, a 20 gauge shotgun shell with the primer pocket drilled out for his cleaning rod, he is very unlikely to bow his rod and cause contact with the rod and lands.

Some powders create more fouling than others and the temperature and humidity also affects the fouling deposit but taking two barrels of equal quality, one will lose its accuracy slightly over 100 rounds without cleaning and the other will be doing better than ever at 1000 rounds with proper cleaning.

Clyde Hart has made it a point in recent years to recheck barrels on his air gauge and compare the readings of those taken when the barrels were first made. He gets a chance to do this for his own guns and friends as they drop by and he has found that with one possible exception, all barrels show a definite restriction for the first 6" beyond the chamber and another less pronounced and shorter restriction at the muzzle. The one exception was from the gun that his brother, Bob, used last summer, and Bob has long contended that guns need a heck of a lot more cleaning between each relay than the average fellow gives them, and a good thorough cleaning after the match is over. A nice soft cotton patch feels nice going down the bore but it doesn't really get in there and clean as a brush does, and some of the boys carry things a step further and use wire brushes that are impregnated with their pet form of abrasive.

I have been getting some pretty interesting letters through the winter. Glen Derber of Neenah, Wisconsin doesn't find many shooters in his area and bewails the lack of nearby matches and even worries a little about standing up to the competition. There is no question in my mind, however, about his having been bitten by the bug. He's just the kind of a fellow we ought to have and hear more from. I couldn't hope to give you many of his comments in this column because of the lack of space but he has a lot of technical skill and access to precise machinery. We have all often wondered what makes some guns shoot better than others, and I guess if the truth were known, it is because some guns are considerably better than others when they come off the factory line. There is a limit, of course, as to how far a manufacturer can go in making his product perfect and there must be some tolerance allowed in every manufacturing process. What these tolerances are at the factory,

(Continued on Page Fourteen)

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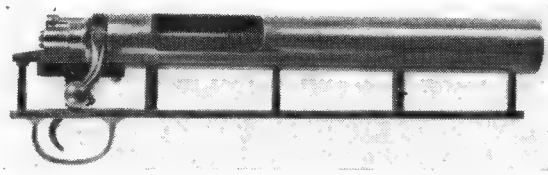

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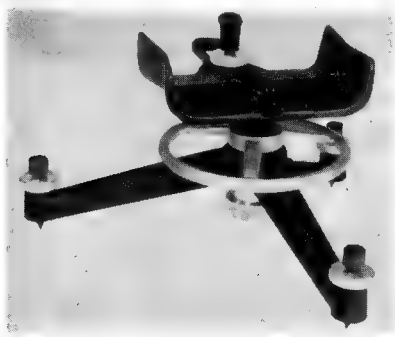

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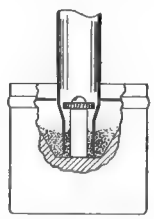

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The Tournament Circuit

(Continued from Page Five)

Club (Pa.) and has been a popular feature of the winter target shooting program in Philadelphia for many years, drawing competitors from quite a wide area. It is a prone, telescope sight, smallbore rifle match, fired at 75 ft. range on targets of 50 ft. gallery rifle dimensions. A special "Sniper's" target is used which has the target rings printed in black on the buff target card (no black bullseye) similar to the targets which are now commonly used for night smallbore shooting. In the Philadelphia matches an 80 shot Championship and four man team Championship events are featured. In the initial New Jersey match the program was for a 40 shot individual match, a 20 shots per member two-man team match, and an individual aggregate for the two match scores.

In the individual match, Harry Stone from Long Island City, N. Y. was the winner with a 400-35x score, and Winnie Carr of the host club was runner-up with 400-26. Fred Triggs 399-26 and John Holle 399-20 had the only 399's fired.

Winnie Carr and Harry Stone teamed up to win the team event with 399-27. E. Clausen and Herman Stollbrink were runners-up with 399-19. Fred Triggs and J. Glaab had 397-21, and from there on down (possibles are not easy in this match).

Harry Stone won the individual aggregate with the only possible score, 600-47. Winnie Carr had 599-41. Fred Triggs, R. Blatchley and John Holle had 598's with 38, 37 and 28 X's.

(It is reported that the P. J. O'Hare firm of Roseland, N. J. plans to supply this special "Sniper's Target" in the near future.)

Stool Shootin' Stuff

(Continued from Page Thirteen)

I don't know, but before Derber made up his new rifle, he checked his action over pretty carefully and here are some of the things he found out. He could see without instruments that the front end of the receiver did not line up with the bolt way. The front shoulder was out of true. The outside of the receiver was not concentric with the boltway. The lug recesses did not line up with one another or with the boltway, and the bolt lugs, too, had to have a cut taken off of them to match up. He had to cut his new barrel threads to match those in the receiver but now that he has all of the things realigned that he could, he, of course, had a great deal more confidence in the way his new job will shoot. I don't mean to be critical about the way things come from the factory, to an unreasonable extent, but I do think that some of the workmanship is a little sloppy and could be improved if the manufacturers would take a bit more pride in their work at all levels. It is probably true also that if some of the manufacturers were to take some of our custom made receivers and measure them and look them over pretty carefully, they could find reason to complain.

I didn't give some of the statistics in the above paragraph because they would probably vary from gun to gun. There were some conditions that most of us could not correct but if the lugs do not properly fit, I have found that a gun does not shoot well and I think I can say that every step a shooter can take to make his gun assembly fit more perfectly is an important step in the right direction. It goes without saying that these steps must be taken before stocking because at the shocking stage, a fellow runs into a whole lot more problems that require the most meticulous fitting possible.

I can give you some of the statistics from a letter that I recently had from Charlie Neumann in Tulsa. He is an experimenter, and shooter with a number of years experience, and likes to mix in with his shooting, a little gadgeteering, just as I do. We have been talking back and forth about operating our presses hydraulically, and I know that some of you fellows who went to Tulsa saw his home made electric chronograph in operation. Charlie is ahead of me in the hydraulic operation and has been able to compile some figures on the actual amount of pressure required for some of the bullet making procedures. I have often written in my articles about bullet making technique—of how important it is to have uniform diameter lead wire and to cut it as accurately as possible; for instance it requires 400 pounds more pressure to extrude one grain than it does one-half grain, and it gets up to around the 5000 pound class when much more than 1. grain is extruded.

Most of us are pretty careful about the way we fit the punches to the inside of the jackets when we are seating the cores, and I think we have all found it best to seat the cores to the minimum stage at which the core seated jackets stick in the die slightly and not on the punches. A new set of dies from B & A with the punch fitting exactly right required 6000 pounds of pressure. When the punch shaved a little copper when it was too sharp and too large, the pressure increased 2000 pounds. I have previously stated that when dies are properly adjusted, bullet swaging is a mild and smooth operation and the figures show that it takes slightly over half as much pressure to swage the bullet than it does to seat a core, and the pressures are even less for a swaged core.

8000 pounds is probably well within the safe limits of the good presses but presses are about like most of the other things that you get from the production line these days. Some are inherently better designed, and if the better design also calls for close tolerances on hard surfaced materials, the muscular effort required by the user is less and the tool will resist wear a great deal longer. I have no idea how many hundred thousand times I have pumped the handles on my RCBS tools. I have now got them equipped with counters and only now am beginning to realize how marvelously they have withstood the wear. I may have occasionally gotten an extra drop of oil down on my sock or shoe but it has been well worth while in seeing the results.

I don't suppose it is possible for me to write this column without confusing some people, and having some people misunderstand some of my points but I was alarmed to note from Colonel Kaiser's letter in the March issue that my telescope comments of January were not clearly understood. I never had the pleasure or good fortune to meet Harry Pope but even without his having to tell me how to use a scope, somehow the word got around in my younger days that it was good to pull the scope back and rotate it at the same time. Indeed I think I can assure the disturbed Colonel that the benchrest boys have long been doing this. I know few of them who do not practice that system but alas I do not know any of them who have not occasionally forgotten to do what they were supposed to do. Sometimes, the failure has been in the middle or at the end of a very beautiful group and the resultant wide shot has hurt. What I meant to indicate clearly in the January article was that an automatic return spring system that would overcome the inertia disturbed scope position caused by recoil might well be preferred to the manually returned system.

NEW

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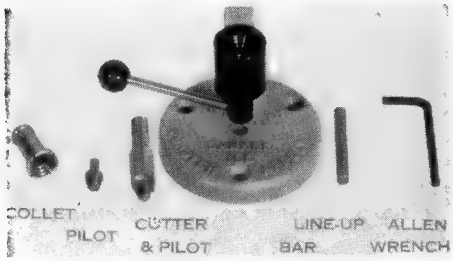

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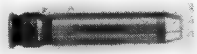

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We are all inclined to believe that our physical and muscular actions can be or are uniform. This is far from the truth and delicate scientific instruments show a tremendous variance, even in particularly skilled people. The variance increases when pressures on the mind or nervous system increase as they naturally do in competition or particularly when one has a hot group going. Show me the man whose blood pressure does not rise, knees do not shake a little, stomach butterfly more or less, or trigger finger tremble slightly when he has a real red hot group going, and I'll open my eyes wider than I have ever epened them before. Some guys exhibit these strains more than others, some control them better than others but I sincerely believe that every shooter has them and I know few that don't admit to having them.

In the January issue, I meant to indicate that scopes and mounts needed redesigning, and Mr. Pope's rib and the current system of stopping the movement of the scope by a flimsy cheaply made clamp ring, haphazardly bearing against a not-to-precise aluminum forward mount yoke is obsolete and I would just as soon say it to the Lymans and Unertls. I don't blame them for it but I do beg them to improve it. Few scope blocks line up exactly with the barrel and the mount must follow misalignment or imperfections in dimensions of that scope block. Furthermore, the scope must be movable for windage and elevation. The clamp ring fixed to the scope tube slides back to make contact with the mounts, wearing it and burring it with each contact which when variations of pressure are applied to the movement, slightly alters the relationship of aim and impact.

I used up a great many words talking and writing agin "return to battery" rests the last two years. I'm still against them for competitive shooting, and I don't contemplate using them in matches this year. The new rules will give those boys who like them a good chance to play with them and it is possible that that class of shooting may predominate but I will say this for such a gadget. It's a great help in testing, and with one, I think I could show Colonel Keiser, as I have myself, that manually pulling back the scope and rotating it even with the greatest of care under unstrained competitionless conditions, is not as precise as a well lubricated spring loaded return system. I am not satisfied that I have such a perfect system yet and even a spring return when combined with rotation to press evenly against the rib does not eliminate the errors that creep in, due to the faulty stop movement features referred to above. A return to battery gadget does indicate clearly a weak or ever-emphasized manual movement and shows how difficult it is to get to the stage of perfection we require by hand operation even when we are concentrating on that portion of our shooting. There are those who believe in lubrication on the tube and those who don't. If there is a lot of dust blowing around the lubricant soon turns to an abrasive paste but it is certainly definitely important to have the plungers in the mount working smoothly and a good contact between their faces and the scope tube.

Cordially yours,

Ernest Stuhlbuchter

COMING: Discussion of one shooter-gunsmith's experiences with rifle barrels and the opinions he has arrived at.

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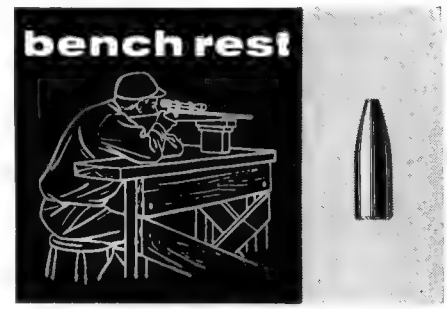

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(Continued from Page Nine)

done just right the primer has the bullet moving and seated just as the high force comes on from the powder gas and very little deformation occurs.

0 or 00 steel wool works good for cleaning lead wire. In any case wash the wire with soap and water after the cleaning operation to prevent grit and dirt getting into your squirt die. Cleanliness is very important in bullet making if you expect the dies to last long. M. H. Walker

Question: It appears that I bother you more than most any other reader of Precision SHOOTING magazine. Accordingly, you will not hurt my feelings if you just file my letter in the round basket with the thought "I've done enough for that fellow already." However, if you are not too busy, I would appreciate your opinion of what powder would be best suited to the following circumstances.

I have a Model 721 Remington in 30-06 caliber. I have a number of other guns that I use for big game hunting. This particular 30-05 I plan to use for hunting javelinas in heavy brush. The shots will be close and one of the things of greatest importance is the speed with which I can get this gun out of the saddle scabbard and into action. I plan to cut the barrel back to 18" and shoot a Sierra 125 grain bullet. I realize I'll sacrifice some velocity with this short a barrel, but I'm willing to give up the velocity to get a faster handling gun.

I would appreciate your recommendation of what powder you would use with 125 grain bullets and then also if you were to load 150 grain bullets, what powder you would use for that bullet. George T. Chandler, Pratt, Kansas

Answer: Certainly a measure of my efficiency as a correspondent is the number of letters I receive, so don't apologize, just keep them coming.

With the 125 gr. and the 150 gr. bullets in the 30-06 with 18" barrel the faster powders will produce the best results for both velocity and accuracy.

I. M. R. 3031 would be my choice with up to 50 grains with the 150 gr. bullet and up to 54 grains with the 125 gr. Both of these are wicked loads. In my younger days I used the 150 gr. load on a four point buck weighing in at about 90 pounds. He was racing by me broadside at a rate of about one step a minute at a range of 30 feet. In order not to spoil any more meat than necessary the hold was well forward and high. Everything went as planned except the spoilage. He was bloodshot all the way to his rear end.

These loads are near maximum, so use the standard handloading practice of working up to them with a modicum of restraint. M. H. Walker

Question: When using the Unertl Vulture in target mounts on the Sako .222 what is considered the best position for the bases? Should both be on the receiver (one on bridge and one on ring) or should one be on receiver bridge and forward one on barrel just ahead of receiver ring? It strikes me that this receiver is a bit short and that placing both mounts on it might be too close. Seely Masker, Pleasantville, N. Y.

Answer: I do not have either the Unertl Vulture or the Sako available for perusal but I know the conformation of both of them and would suggest that you place the front mount on the barrel. The minimum spread of 7" is desirable. However, I have used as little as 6" with success.

With the Vulture, since it would be advisable to place the front mount on the barrel, it is likely you can get close to the 7" spread. Don't forget to check the eye relief by placing the scope on the rifle temporarily before you drill any holes. The scope eyepiece should be no further back than the rearmost point on the receiver and it may be desirable to have it slightly forward of this position. In the prone position, or any position similar, the head is usually well forward on the stock and a compromise scope position is necessary to prevent either a too short eye relief or striking the eyebrow in recoil. Of course, recoil is not a problem with the .222.

If you need exact figures for this scope mounting I would suggest that you write to John Unertl since it is quite likely that he has had this same problem before. M. H. Walker

Question: Some time ago there was an article in Precision SHOOTING in regard to the advantages of stainless steel barrels. I can't locate the piece in question so don't know whether or not you wrote it but thought you might be able to explain or verify one of the statements.

As I recall, the article referred to a 6mm barrel and stated that after several hundred rounds had been fired a stainless steel barrel would deliver approximately 300 f.s. more velocity than a barrel of regular steel, and that the velocity differential would increase with an increase in caliber.

The article was not clear as to whether this alleged advantage is due to a falling off of velocity in the regular barrel, while the stainless maintained its original velocity, or whether the regular barrel velocity was constant and the stainless showed an increase. In any event, there was no explanation as to why there should be any velocity gain nor any mention of any controlled tests which would prove the statement. 300 f.s. is a considerable gain, 10% of 3000 f.s., and is well worthwhile if it is a fact rather than someone's unsupported impression. I would appreciate your comments as to the above.

I have been playing around with Remington rifles and shotguns for the past 25 years, starting through an acquaintance with one of their former salesmen from upper New York, Charlie Smith, and later through my friendship with Bert French, former manager of the Products Division at Bridgeport. On several occasions Bert made available to me advance models of rifles, bullets, etc. so I could give them a try, especially during twelve years I spent in Alaska, hunting, guiding and experimenting. I now have Remington rifles in .222, .244 and .280.

The .22 is working fine, as is the .244, but I'm having trouble in getting the .280 to shoot and I'm hoping you may have some suggestions. The Model 725 has been glass bedded but the 100 yard groups are averaging right at 2", which is not good. So far I've tried factory 165 gr., Sierra 160 gr. and Sierra 140 gr. bullets backed with varying charges of 4350, 4895 and 4831. Can you suggest some loads to try in the .280 or give me any advice which might tighten the groups? I'm presently trying it with varying pressures at the forend and floating the barrel but that doesn't seem to help either. What about the .283 bore and .284 bullets.

I have an '06 barrel shortened to 22" which averages an inch for 5 shots at 100 yards, and has for several years, with the Speer 180 gr. and 4320 powder. Several weeks ago I started to work up some loads with the 110 gr. Sierra and after trying 52 to 58 grs. of 4895 (the old blend) settled on 56 gr. which two weeks ago delivered 3 consecutive groups of ⅞, ¾ and ⅝ inch, this using a 4X hunting scope. It's poison on running jack rabbits. Am going to shoot some more check groups for it's almost too good to believe.

I had always felt that the reason the Speer bullets shot so well in my .30 was that they're .3085 and my barrel slugs out at .3088, and that they were a better fit than the usual .308 bullets. But then the 110 gr. Sierra which is .308 shoots better than any of them.

What 85 gr. bullet and powder charge have you had best results with in the .224? Fred Weiler, Spokane, Wash.

Answer: The statements regarding velocity differentials between a stainless steel barrel and a standard steel barrel can not be attributed to me. However, although the figures quoted may not be exactly right, the idea is true in general.

Ordinarily, in the measurements of external and internal ballistics, a record is kept of the velocity and the pressure with a standardized load in order to ascertain the useful life of the barrel. In the .220 Swift, for instance, it is possible to have the velocity increase as much as 25 to 50 ft/sec in the first 100 rounds. The velocity generally then starts to fall off and by the time 500 rounds has been fired the velocity is 300 ft/sec less than when the barrel was put into service. Stainless generally has a minimum of 30% better velocity life than Chromemoly or ordnance steel.

From your reported results with the .280 it sounds as though your rifle is incapable of doing better than you have stated. If your accuracy with any of the Remington factory loads is worse than approximately 3½ inches you would be justified in returning the rifle to the factory for repair or barrel replacement. As you must realize you have a very fine 30-06 in a class of its own. I have seen no Sporter that would do anywhere near as well and only a few Target versions. The free rifles which I am now working on will average between ½ and ⅝" with the better combinations.

The minimum groove diameter is .2837" in the .280 so it is quite likely that the .284" 7 mm bullets should work very well. Bullet size in a .30 caliber is probably not important if the bullet diameter is within the .0005" of the groove diameter provided the loads are worked out for each bullet. This is probably true also of the .280.

The best bullets I have used with the 6 mm are 75 gr. B&A bullets. The next best are 90 gr. B&A made in my own dies. The 85 Sierra and 75 gr. Hollow Point are the two most accurate bullets available from the various commercial bullet makers. The best results have been recorded with 40 to 43 grs. of 4064.

However some of the bench rest shooters are using 3031 with the 75 grain Sierra with very good results. I would start with approximately 36 grains and work up. M. H. Walker.

Question: I'm getting misfires with .45 G. I. ammo. Is the stuff any good? George Riles, Oklahoma City

Answer: How good it is depends on the Lot Number and gun. Some lots have extremely hard primers that give over 50% misfires on a Drop Test that fires CCI primers in handloads 100%. Some lots may be worse. Testing a law enforcement officer's M-1921 Thompson sub-machine gun, some steel jacket, steel case fodder head stamped TW-53 gave about 10% misfires, and failed to function the action nearly 100%. It functioned a Colt .45 pistol with no misfires, but snapped in a Smith & Wesson .45 Target revolver that was tuned, or over tuned.

Some brass case, gilding metal jacket bullet fodder head stamped FC-5 functioned the MG perfectly, but gave more misfires in it and the Smith & Wesson. It fired and functioned in the Colt .45 pistol, that has a heavy firing pin blow and loose jointed action. If I used a Target Revolver for competitive shooting, or a Chicago typewriter in my business, I'd purchase commercial ammo or handload my fodder with CCI primers; the latter being my preference, because I think I can assemble better ammunition than mass produced factory fodder. Some target shooters like steel cases for reloads. They work easily in Tungsten Carbide dies. But I've had them seize in a chamber, plus some other faults, and I like good brass. Kent Bellah.

Some Characteristics of Precision Scope Sights

(Continued from Page Seven)

that the apparent curve in the crosshairs of the B&L scopes which incorporate the variable power feature is connected in some manner with the latter. The variable power in the newest B&L family of scopes is an impressive accomplishment but it is a great misfortune that it is accompanied by curvature. I raise the question: cannot Bausch and Lomb provide us with both variable power and flatness of field by redesigning the eye-piece? It could well be made in larger diameter if that would help. The Unertl has a larger overall diameter of eye-piece, of course.

There may be some other minor improvements due on this scope as well. I have discarded the whole return spring assembly—how cumbersome it is! The primary adjusting screws in the rear mounts are poor; so is the weak click adjustment and the very unsatisfactory dial readings. But on the other hand, here we have the largest manufacturer of optical instruments in North America in the fine scope sight field. This is a great event in itself. It is surely a guarantee that in time we shall move closer to the ultimate and that other makers will not allow themselves to be left behind. If Bausch and Lomb has spent from $10,000 to $100,000 to develop the 6x24X and sales have been encouraging, surely they will go further. A new eye-piece with longer relief and with elimination of that distressing "fluttering" would be signal improvements alone.

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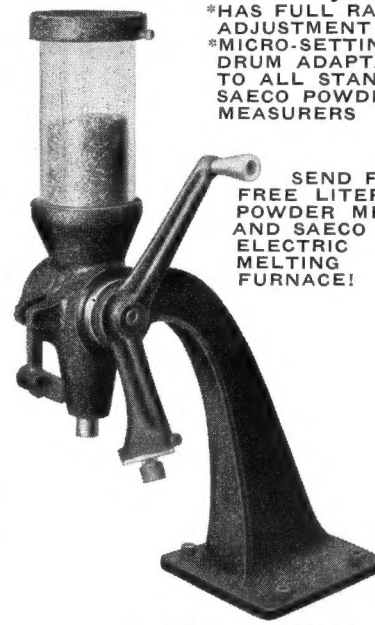

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3. 300 Meter Aggregate score, Du Bois, Pa., 1957, Don Robbins.
4. First and Second places, 300 meters, Du Bois, Pa., 1957, Clair Taylor and Don Robbins.
5. National Match Course, Du Bois, Pa., 1957, 1st, 3rd, 6th, 7th places.
6. National Match 10-shot 100 yd. aggregate, Augusta, O. Al Creighton, .3105".
7. National Bench Rest Championship, Johnstown, New York, 1955, Sam Clark, Jr.
8. 10 Shot 200 yard WORLD RECORD, Du Bois, Pa., 1954, Sam Clark, Jr. Score, or Group, .5276"
9. 10 Shot 200 yard WORLD RECORD, Du Bois, Pa., 1956, H. L. Culver (Present record) Group size .4016"
10. 1000 Yard, Famous Wimbledon match, any sight, 1955, Camp Perry, O. Frank Conway.
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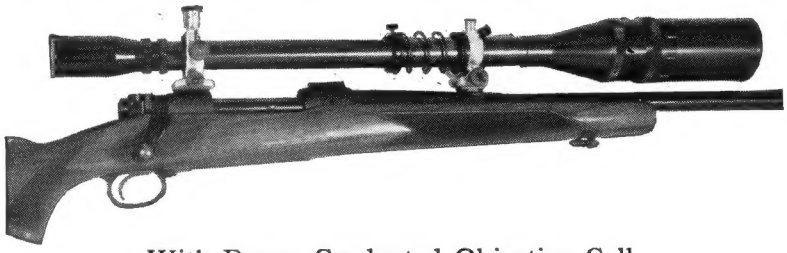

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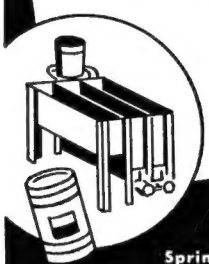

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Letters

(Continued from Page Three)

a man used to shooting it.

All this is just to point out the fact that the once-a-year civilian M1 operator ain't going to come out even with the service or full-time civilian M1 rifleman, regardless of equipment.

There is no chance whatever of rifles being completely standardized, for one of the purposes of the National Matches is to encourage development of better military arms and ammunition, not to freeze it. The arsenals cannot provide match-conditioned arms in mass production. The N. M. M1 is itself a great achievement for Springfield Armory, and their accuracy work, as outlined in a recent article in the AMERICAN RIFLEMAN, is a result of the experiment and experience of the service squads. Incidentally, the article covered the standard asesmbly procedures of the arsenal for match-grade rifles—actual match-conditioning is after they're done!

Any civilian hoping to seriously compete in the National Matches is going to have to have his own rifle, have it match-conditioned (which starts with glass-bedding), or be lucky enough to draw a good one and have it gone over and given a quick job by a skilled armorer **before** he even fires a round, and hope nothing goes wrong that necessitates further work on the rifle after the matches begin. It can happen. George Stidworthy drew a rifle, I gave it a quick treatment—shimmed stock, fixed guard, gas cylinder, trigger pull, etc. and he ended up National Civilian Service Rifle Champion for 1958.

Practically any M1 with a decent barrel, not necessarily a match-grade rifle, can be match-conditioned to perform very well, if the stock is in good condition (not oil-soaked). If the barrel is good, the rifle can shoot as well as a bolt action. And they last awhile. One service shooter at the last matches was bitter because he had orders to turn in his rifle because it had over 5,000 rounds through it and he said it would still stay in 4 inches at 300 yards. The rifle was one of ten I had fixed up for his team.

Variations in rifles would make the National Matches very much of a luck proposition if all entrants had to fire rifles just handed them. The best shot in the country wouldn't have a chance if he happened to get an M1 with cylinder bearing that would make his second strings rapid fire walk halfway out of the bull, or with a rod that would give him a three regularly at 600 yards. He would have no opportunity to find out how the rifle performed during the limited practice at Perry. It takes a lot of shooting to settle down an unbedded M1 and find out its idiosyncracies.

Roy E. Dunlap, Tucson, Ariz.

.264 Stroud Express

(Continued from Page Eight)

and 1 3/16" at breech, with .014" taper per inch.

Cases are formed from 30-06 (G. I. brass preferred) or .270 Winchester. Procedure is:—1) Set 7 mm trin die in R. C. B. S. tool to move shoulder back, so case length from base to top of shoulder is 1.880", and cut to 2.407" length. 2) Size in .264 Express die to have pressure fit when action closes on a chambered case. 3) Fire form with about 41 grs. 4895 behind the 129 gr. Hornady R. N. bullet for over-all length of 3.250". 4) Trim case to 2.395 inch length. 5) After second firing with regular load, trim case to 2.390 inch length.

This is Stroud's baby, and a good one, so I'll quote him: "In building a .264 Stroud Express, one must decide what weight bullet he will shoot to arrive at the proper twist. A 1 to 10 is for pills near 140 grains, and a 1 to 9 is necessary for 156 and 160 grain bullets. My rifle is throated to take 140 gr. Sierra spitzers loaded 3.250" over-all. It will consistently shoot tighter minute-of-angle groups at 200 yards than at 100.

"At the high velocity the long bullets are moving they do not go to sleep inside 100 yards. (This is also true of the .257 Weatherby Magnum, probably the flattest shooting of all rifles at 300 yards or more.) I have not chronographed the velocity, but a 140 gr. Sierra B. T. ahead of 59.5 grains of 4831 shoots 4.5" flatter at 500 yards than a .270 Win. 130 Gr. Sierra backed with a near maximum charge of 50.5 grs. of 4320, from a 2 inch longer barrel.

"The biggest fault is that bullets blow up inside 200 yards on deer sized game, although it isn't a fault on wolves or varmints. Two muleys were bagged on a Colorado trophy hunt. First one was shot at 176 yards (measured), shooting down at about 20 degree angle, the deer walking away. The bullet hit 2 inches to right of the backbone, over the shoulders, centering the rib as it entered. The bullet exploded, peppering both sides of the rib cage with fragments, collapsed both lungs, ripping the diaphram completely loose on the right side.

Stroud's wildcat is within about 2 grains case capacity of the long awaited .264 Winchester Magnum, and it will be a simple matter to chamber his version to the new cartridge if desired. Those interested can obtain details from Stroud.

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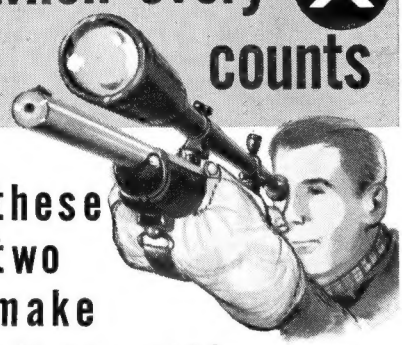

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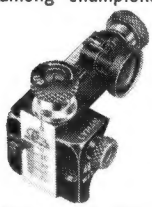

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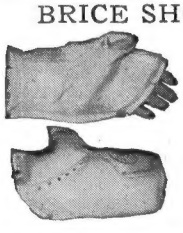

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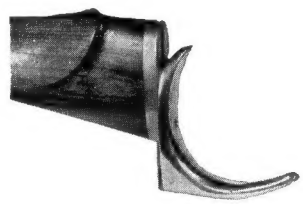

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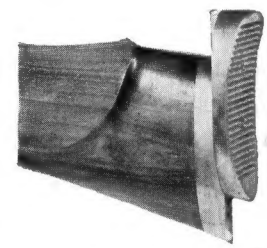

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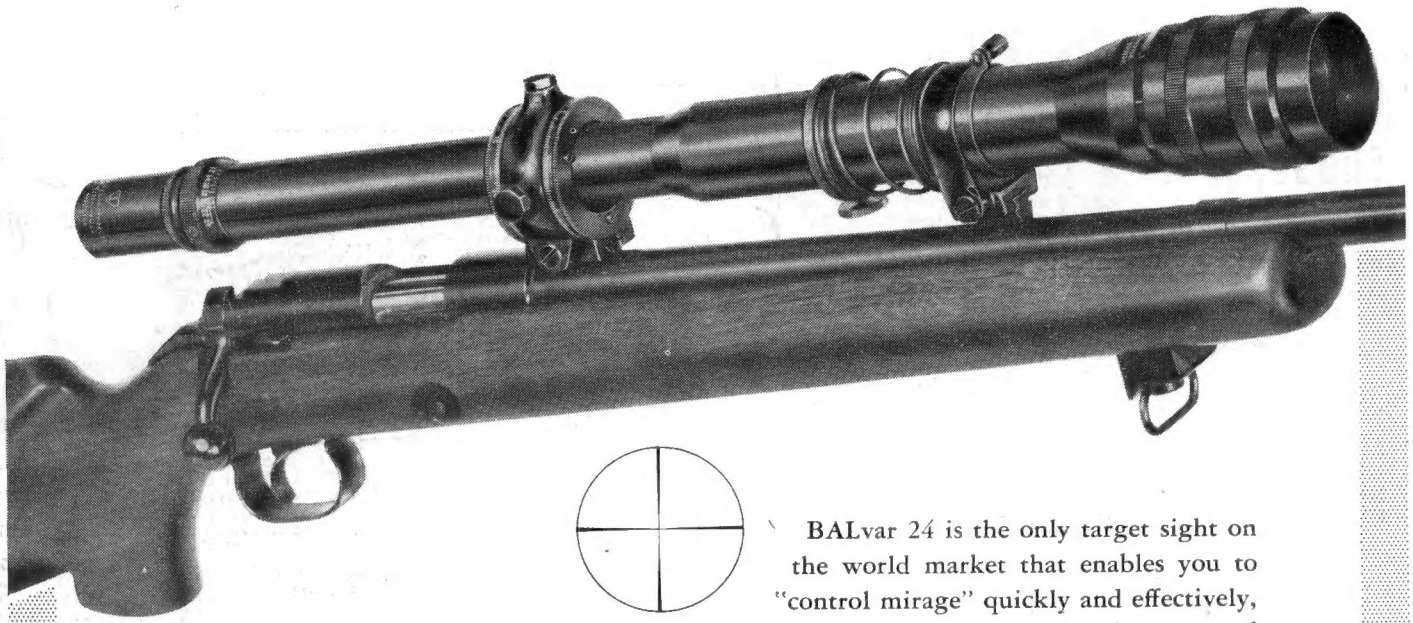

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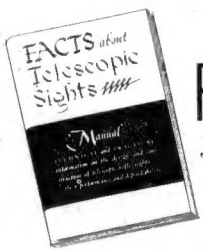

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